

IN VITRO EFFECTIVITY OF LEMON PEEL ESSENTIAL OIL (CITRUS LIMON) AGAINST CANDIDA TROPICALIS

ABSTRACT

Background: Citrus limon is one of the plant material that has antifungal properties which has many active ingredients, such as limonene, β -pinene, γ -terpinene. Candida tropicalis is one of the most frequent causes of candidiasis after C. Albicans. Increased isolation of C. tropicalis from various clinical type of candidiasis is concerned because it is resistant to fluconazole. **Purpose:** The aim of this study is to determine the effectivity of lemon peel essential oil against C. tropicalis growth. **Methods:** The essential oil extracted from the lemon peel by using steam distillation method. Various lemon peel essential oil concentration is obtained by using serial dilution method and colony counting test is performed to measure the effectivity of lemon peel essential oil. **Result:** There are some different effectivity of essential oil in various concentration (25%, 12.5%, 6.25%, 3.125%, 1.56%, 0.78%, 0.39%, and 0.195%). **Conclusion:** Lemon peel essential oil can kill C. Tropicalis at 1.56% concentration (MFC) and can inhibit the growth of C. tropicalis at 0.78% concentration (MIC).

Key words: Lemon peel essential oil candida tropicalis, lemon peel, serial dilution.

**EFEKTIVITAS MINYAK ESENSIAL KULIT BUAH JERUK LEMON
(CITRUS LIMON) TERHADAP PERTUMBUHAN JAMUR CANDIDA
TROPICALIS SECARA IN VITRO**

ABSTRAK

Latar belakang: Salah satu bahan tanaman yang memiliki sifat antifungi adalah Citrus limon yang memiliki banyak kandungan aktif, seperti *limonene*, β -pinene, γ -terpinene. *Candida tropicalis* merupakan salah satu *Candida non-Candida Albicans* penyebab utama kandidiasis. Peningkatan isolasi *C. tropicalis* dari berbagai variasi klinis kandidiasis mulai diperhatikan karena sifatnya yang resisten terhadap fluconazole. **Tujuan:** Untuk mengetahui efektivitas minyak esensial kulit lemon dalam menghambat pertumbuhan *C. tropicalis*. **Metode:** Minyak esensial kulit lemon diekstraksi dari kulit lemon dengan metode steam distillation. Berbagai konsentrasi minyak esensial kulit lemon didapatkan melalui metode serial dilution, lalu dilakukan uji penghitungan koloni untuk mengukur efektivitas minyak esensial kulit lemon. **Hasil:** Konsentrasi minyak esensial kulit lemon 25%, 12,5%, 6,25%, 3,125%, 1,56%, 0,78%, 0,39%, dan 0,195% memiliki perbedaan efektivitas dalam menghambat pertumbuhan *C. tropicalis*. **Kesimpulan:** Minyak esensial kulit lemon dapat membunuh *C. tropicalis* pada konsentrasi 1,56% (MFC) dan dapat menghambat pertumbuhan *C. tropicalis* pada konsentrasi 0,78% (MIC).

Kata kunci: Minyak esensial kulit lemon, *candida tropicalis*, kulit buah lemon, serial dilution.